

Governing the Backbone: Fiscal DPI for Governance Outcomes

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EXECUTIVE SUMMARY

As governments digitize their fiscal systems — from budget execution and procurement to social transfers and audits — fiscal digital public infrastructure (fiscal DPI) is becoming central to how public finance is planned, managed, delivered, and experienced. These systems are no longer just back-office tools; they are fast becoming the backbone of public financial management (PFM). Recognizing the significance of this transformation, the Trust, Accountability, and Inclusion Collaborative (TAI) commissioned this exploratory scoping study to examine the governance implications of fiscal DPI, with a particular focus on its effects on transparency, participation, accountability, and inclusion (TPAI).

"Fiscal DPI" is a working term used in this scoping study to describe the foundational digital solutions, such as systems, platforms, and tools, that underpin digital PFM, including budgeting, procurement, revenue, payments, and audits. While not a universally codified term, fiscal DPI is proposed here to distinguish the fiscal layer of digital public infrastructure from other domains, such as digital identification or sector-specific applications in areas like health or education. The term reflects an effort to frame these platforms not merely as technical tools, but as core components of governance infrastructure with direct implications for TPAI. The design and use of these systems influence institutional behavior, users and citizen experience, as well as public outcomes.

This rapid scoping study draws on two primary sources:

- (1) Semi-structured interviews with funders, implementers, and civic actors from a variety of regions and institutions, and
- (2) A rapid review of emerging tools, cases, documentation, and standards relevant to fiscal DPI.

Rather than providing a comprehensive mapping, this scoping aims to surface key risks, recurring patterns, and emerging lessons to inform how funders can better support governance-integrated fiscal DPI. The analysis was guided by eight core research questions, and the findings reflect early-stage experiences and evolving evidence in this fast-moving field.

The window to shape the governance of fiscal DPI is open, but it is closing rapidly. Current systems are being designed primarily for automation and efficiency, often relegating governance safeguards to an afterthought. This has led to a fragmented ecosystem where vendors retain control over core infrastructure through long-term contracts (typically seven to ten years, sometimes more), civic actors are sidelined from design processes, and a lack of donor coordination perpetuates project-based, siloed, and inconsistent approaches.

Design decisions in fiscal DPI, such as eligibility rules, data access rights, and grievance or appeals processes, determine who is visible to the state, who receives services, and who has recourse when harms occur. These are not neutral technical choices: they are political decisions that shape power and accountability. Without proactive intervention, fiscal DPI risks institutionalizing opacity, reinforcing exclusion, and bypassing public oversight altogether. The findings that follow illustrate how these dynamics are unfolding in practice and outline the necessary steps to address them.

Fiscal DPI is not politically neutral. It redistributes power. Design choices regarding eligibility, appeals, data visibility, and vendor models have a significant impact on access to public services and the ability to obtain redress. Across nearly all interviews, respondents emphasized that fiscal DPI is more than a technical upgrade, it is a form of political infrastructure. Governance considerations are often treated as optional or deferrable rather than fundamental. The same

integration that enables efficiency also enables monitoring and control, with real-time tracking of transactions creating unprecedented surveillance potential. Vendor lock-in creates technical dependencies that are difficult to escape, effectively ceding sovereignty over critical infrastructure to companies.

While some interviewees acknowledged legitimate pressures to prioritize speed, many warned that efficiency gains without embedded safeguards risk excluding vulnerable groups and eroding trust. As one respondent noted, "We are automating opacity faster than we are building safeguards."

Strategic tensions shape every implementation decision. Fiscal DPI implementations navigate fundamental trade-offs between competing priorities:

- Efficiency vs. Inclusion (e.g., rapid scaling vs. beneficiary exclusion due to technology choice).
- Technical Control vs. Public Value (proprietary systems vs. open source, cost-efficient, and inclusive of monitoring features platforms).
- Speed vs. Safeguards (mechanical transfer of funds or procedures vs. addressing grievances).

These are not simply design preferences — they are political and ethical choices with real distributional impacts.

Civic participation is frequently symbolic or missing. Despite the promise of digital tools to democratize public finance, civic participation in fiscal DPI remains limited, symbolic, or absent. Digital systems such as budget portals and open contracting dashboards present continued opportunities to enhance citizen engagement and institutional accountability but often fall short due to shallow design processes and weak legal and governance frameworks, as well as lack of access to a regular flow of updated data.

Civic actors and communities are routinely excluded from the design, procurement, and piloting phases of digital fiscal systems. When public-facing components do exist, they frequently lack updated or disaggregated data, clear legal mandates, or mechanisms for meaningful user interaction. As a result, engagement tends to be performative rather than substantive, failing to influence decision-making or foster accountability.

Funding patterns further entrench these shortcomings. Most resources are directed toward technical infrastructure, with governance and civic engagement treated as optional or secondary components. Exclusion audits, end-user capacity-building, and feedback loops are rarely prioritized or funded. Grievance redress systems and transparency portals, key enablers of trust and accountability, are still exceptions rather than norms, even in major donor-backed reforms.

These gaps are especially pronounced in PFM-linked delivery systems, such as procurement, auditing, and service delivery tracking. Without deliberate investment in participatory mechanisms and accountability safeguards, digital fiscal reforms risk reinforcing existing power asymmetries rather than transforming them.

Fragmentation undermines the foundations of TPAI. The promise of TPAI hinges on the existence of interoperable, standards-based systems that allow for consistent civic engagement and oversight. Today's fiscal DPI is fragmented and shaped more by donor mandates, vendor interests, and ad hoc national solutions than by shared standards for transparency, participation, or equity.

Digital fiscal systems have evolved unevenly across proprietary platforms, bespoke government solutions, and isolated donor-funded initiatives. The lack of interoperability and common frameworks limits the scale, usability, and replicability of successful governance innovations (even within countries), making it difficult to connect fiscal data with participatory platforms or grievance mechanisms. This directly weakens the core of TPAI by preventing joined-up, citizen-centered accountability.

While open digital public goods (DPGs) such as the Open Contracting Data Standard (OCDS), BOOST (the World Bank's public expenditure database to enhance fiscal transparency), and GovStack's fiscal modules (a standards-based, interoperable framework developed by a multi-stakeholder initiative led by the German government and involving a wide array of partners) offer more equitable and transparent alternatives, they remain underutilized due to entrenched procurement preferences, limited stakeholder awareness, and the lack of mandates requiring alignment with TPAI principles.

A power imbalanced ecosystem undermines coordination and accountability. The current landscape reveals critical power imbalances: ministries of finance typically lead acquisition and implementation but often show limited commitment to TPAI outcomes. Civic organizations such as the International Budget Partnership (IBP) and BudgIT possess deep fiscal transparency expertise but are frequently excluded from the co-design of DPI. Vendors dominate the market through proprietary contracts, while DPGs, including tools like the OCDS, BOOST, OpenSpending, and GovStack struggle to gain traction despite offering clear cost, time, governance and interoperability advantages. Meanwhile, multilateral funders deploy millions of dollars annually to support digital fiscal systems yet often fund technical components in isolation from accountability or civic engagement mechanisms.

The evidence gap is severe, limiting learning, accountability, and change. Despite a surge in global digital investments, only a small proportion of studies systematically evaluate impacts on TPAI. No standardized indicators exist for measuring governance outcomes in fiscal DPI systems. Research overwhelmingly focuses on technical metrics such as processing speeds, cost reductions, transaction volumes, transaction compliance, etc., while governance outcomes remain unmeasured. The evidence base is fragmented across sectors and countries, with limited representation from affected communities, developers and researchers from the Global South. As one interviewee put it, "Speed is outpacing safeguards."

This scoping exercise revealed three critical interventions that funders can pursue to align fiscal DPI with governance outcomes:

- (1) **Embed governance by design, not as a retrofit.** Essential components include public dashboards that citizens can understand and use, grievance systems that provide real-time resolution, and participation modules that enable input into, for example, public planning and budgeting priorities. It is recommended supporting three to five country pilots, selected based on political interest and commitment, to prioritize governance, ensure sufficient civic space for meaningful participation, and achieve basic technical readiness. These would integrate transparency, grievance, and participatory features from the outset. TPAI features would be integrated into procurement requirements, and participatory design processes, including engaging citizen users and key civil society organizations (CSOs), could be tested. We expect that a minimum of 15% of project budgets would be ring-fenced for governance features and stakeholder engagement, including parliaments, supreme audit institutions (SAIs), media and others.

- (2) **Build common benchmarks and standards through participatory and inclusive processes.** Funders can support the development of measurable indicators for TPAI in fiscal DPI that build on existing frameworks (e.g., Public Expenditure and Financial Accountability (PEFA) Framework¹ and the Open Budget Survey²) while adding digital-specific indicators for participation methods, algorithmic transparency, and redress mechanisms. Development must involve multi-stakeholder working groups with strong representation from the Global South, with pilot countries testing draft indicators before a broader rollout. This creates the foundation for cross-country comparisons and race-to-the-top dynamics.
- (3) **Coordinate and share lessons through a sustained learning infrastructure.** There is opportunity to invest in platforms that enable peer learning and exchange, align donor efforts, and elevate civic perspectives beyond scattered reports and bilateral exchanges. This includes regular summits that bring together diverse practitioners, working groups focused on specific challenges (such as procurement reform or inclusion testing), and the systematic documentation of both successes and failures. Unfortunately, current knowledge management is limited. Genuine learning requires honest assessment and South-South practitioner exchanges funded at scale.

Fiscal DPI has the potential to enhance state capability, accelerate service delivery, and strengthen public trust, but only if governance is a first-order priority. The current trajectory toward efficiency-first, vendor-driven systems risks creating a digital infrastructure that prioritizes control over democracy. As one informant said, "We need to invest in both the pipes and the people."

This moment offers a critical opportunity to align infrastructure and inclusion. The governance architecture being built now will determine not just how money flows but who is visible, included, contributing, and empowered in the digital age. Funders, governments, and civic actors can act now to ensure that the next generation of fiscal systems is **not only faster but also fairer**. The window for shaping these foundational choices is closing rapidly.

Fiscal DPI is fast becoming the governance backbone of public service delivery. Whether it enables accountability or authoritarianism or otherwise will depend on the design choices and governance investments made now. Funders and reform partners must move beyond infrastructure and efficiency to invest in coalitions, safeguards, and shared standards that embed TPAI at the heart of digital fiscal transformation.

¹ PEFA is a framework developed by multiple development partners (including the World Bank, International Monetary Fund (IMF), and European Union (EU)) to assess the condition of PFM systems. PEFA assessments have included transparency and participation elements and could be further expanded. Learn more [here](#)

² The Open Budget Survey is conducted by International Budget Partnership and is available [here](#)

1. Overview of Brief

This brief presents the key findings of a 2025 scoping exercise commissioned by the Trust, Accountability, and Inclusion Collaborative (TAI) as part of its Fund Fiscal project. The objective was to explore how digital public infrastructure (DPI) intersects with public financial management (PFM) systems and the core governance values of transparency, participation, accountability, and inclusion (TPAI), a critical but under-examined area in the evolving digital governance landscape. The scoping included a rapid literature review and interviews with ten experts working at the intersection of PFM, civic technology, fiscal reform, and DPI.³

Digital systems are increasingly reshaping the backbone of fiscal governance. While earlier conversations around DPI have focused primarily on foundational layers such as digital identity (ID) systems and digital payments, a quieter yet equally consequential transformation is underway in the fiscal domain. Governments across low- and middle-income countries are deploying digital systems to plan, budget, procure goods, transfer public funds, and manage financial records. These platforms, referred to in this brief as fiscal DPI, constitute the digital infrastructure underpinning how public resources are mobilized, planned, allocated, spent, accounted for, reported, and audited.

At stake is not only the efficiency of service delivery but also the democratic legitimacy of digital governance. The design and governance of fiscal DPI will determine not just how money flows, but who is visible, included, and empowered.

This brief presents a synthesis of key informant interviews, documentation review, and system observations to analyze the governance implications of fiscal DPI. It provides a framework for what is at stake, highlights emerging tensions, and proposes concrete steps for funders and partners to advance a more inclusive, accountable, and rights-based fiscal transformation.

How to Use This Brief?

This brief is organized to support different entry points:

- **Section 2** outlines why fiscal DPI matters for governance outcomes.
- **Section 3 and 4** defines key concepts, including fiscal DPI, digital PFM, and DPI architecture.
- **Section 5** explore systems, gaps, and strategic tensions.
- **Section 6** presents potential actions for funders and reform partners.
- **Section 7** gives additional recommendations for other stakeholders working in this space.
- **Section 8** concludes.

If you are already familiar with DPI concepts but want more analysis, go to section 5. If you are most interested in recommendations, see sections 6 and 7.

All references, sources, and further reading cited throughout this brief are compiled and listed in full in the annex at the end of the document. Readers seeking additional details can consult the annex for a comprehensive reference list.

³ This study is based on two main sources: (1) semi-structured interviews with a small selection of funders, implementers, and civic actors across diverse regions and institutions; and (2) a rapid review of emerging tools, cases, documentation and standards relevant to fiscal DPI. The analysis was guided by eight core research questions, exploring the implications of DPI for TPAI in public finance; the opportunities and risks for fiscal governance; existing evidence and gaps; key actors; user needs; funder strategies; insights from open data and civic tech; and potential directions for future work in this area.

2. Why Fiscal DPI Matters for Governance and Accountability

At its best, fiscal DPI offers enormous potential to strengthen public accountability, improve service delivery, and accelerate inclusive growth and development. E-procurement systems can curb corruption. Digital payments can speed up emergency and social cash transfers. Budget transparency portals can empower watchdogs and online budget systems can advance participatory planning and budgeting in communities. When aligned with decentralization efforts, digital platforms can also improve local government autonomy and responsiveness. But at its worst, fiscal digitalization can reinforce exclusion, automate opacity, and bypass public oversight entirely.

Interviewees for this brief described a consistent pattern: platforms are being built for automation and efficiency while transparency, participation, and safeguards are often treated as afterthoughts, if addressed at all. This asymmetry is compounded by structural power dynamics: digital vendors set technical parameters and for governments as users only; donors fund rapid rollouts, which are often project-based; governments centralize decision-making; and civic actors and citizens are left to navigate closed systems they neither co-designed nor govern and will likely than not use.

For example, emerging evidence suggests that the digitization of public sector and tax systems could yield transformative fiscal dividends for African countries. Experts at the 2025 African Development Bank annual meetings highlighted estimates that the digitalization of tax systems alone could generate up to \$125 billion annually in new revenue, without increasing tax rates. More broadly, DPI for public sector management could unlock up to \$687 billion in fiscal capacity continentwide. (African Development Bank Group, 2025) Such gains require not only adopting digital tools but also pairing them with robust governance, inclusive policy frameworks, institutional capacity-building, and regional integration. Successful initiatives, like Uganda's customs revenue digitization (which led to a 47% revenue increase), show that fiscal DPI fosters accountability, transparency, and inclusion if coupled with strong political will and training for public officials.

The moment is critical; as major funders double down on DPI, the fiscal layer remains under-examined, especially its governance architecture. How these systems are designed, who they serve, and what rules govern their use will shape the future of democratic accountability in the digital age.

3. Defining the Terrain

What is DPI?

DPI is gaining global recognition as the foundational layer of digital governance. It refers to **interoperable and reusable digital systems that enable the delivery of essential public and private services at scale**. These traditionally include systems for digital ID, digital payments, and data exchange, which are often government-owned or regulated, even when developed with private sector support ((Digital Public Goods Alliance, 2024; United National Development Programme (UNDP) & Office of the Secretary-General's Envoy on Technology (OSET), 2024).

DPI is frequently described as the "digital equivalent of physical infrastructure," i.e., it becomes critical if widely used, accessible, and enabling multiple downstream applications (highways is a frequently used example).

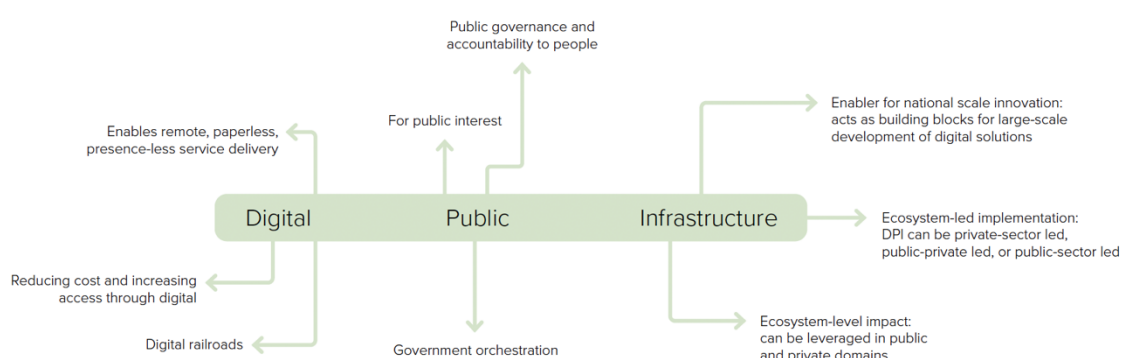
While in general DPI encompasses broad digital systems, such as ID platforms, mobile connectivity infrastructure, and general data exchange protocols that serve multiple sectors, **fiscal DPI refers explicitly to the subset of digital infrastructure that directly enables government financial operations and fiscal governance.**

Think of it this way: if DPI is the entire digital highway system, fiscal DPI represents the specific routes and infrastructure that carry public money and resources, from tax collection systems to budget platforms to social payment mechanisms. These fiscal-specific systems build upon general DPI (such as digital ID for beneficiary verification) but serve the achievement of the key objectives of a “healthy” PFM system: fiscal discipline, strategic allocation of resources and efficiency in service delivery.

DPI builds on the foundations of open data⁴ and civic technology (often shortened to civic tech)⁵ but raises the stakes. Where earlier efforts focused on publishing data, making information available and timely, or enabling tools for transparency, DPI embeds decision rules and logic directly into the infrastructure of public service delivery. This shift makes design choices, governance structures, and inclusion mechanisms even more consequential.

As UNDP puts it, DPI is a set of shared digital systems which are secure and interoperable, built on open standards and specifications to deliver and provide equitable access to public and/or private services at societal scale and are governed by enabling rules to drive development, inclusion, innovation, trust, and competition and respect human rights and fundamental freedoms.

Figure 1: DPI Definition by UNDP



Source: The DPI Approach: A Playbook, UNDP and G20 India Presidency, 2023

Understanding PFM, Digital PFM, and Fiscal DPI

PFM refers to the set of laws, rules, systems, calendars and processes used by governments (and other relevant stakeholders, both formal and informal) to mobilize revenue, allocate resources, execute budgets, account for and report on funds, and deliver audit results (Andrews et al., 2014).

⁴ Open data refers to data that is made publicly available in a machine-readable format, without restrictions on reuse, and ideally updated regularly. It is often released by governments to promote transparency, accountability, and innovation. The Open Data Charter defines six principles including open by default, timely and comprehensive, accessible and usable, comparable and interoperable, and for improved governance and citizen engagement. Consult the Open Data Charter to learn more [here](#).

⁵ Civic tech encompasses digital tools and platforms that facilitate civic engagement, improve public services, and strengthen democratic participation. It includes e-petition platforms, participatory budgeting tools, open contracting portals, and grievance redress apps.

Effective PFM is fundamental to achieving public sector efficiency, transparency, and accountability.

Within PFM, Financial Management Information Systems (FMIS) play a crucial enabling role. FMIS automates and integrates key PFM functions such as planning, budget formulation, commitment control and payments, cash and debt management, treasury operations, accounting, and financial reporting. When these systems are linked with each other's, such as e-procurement, payroll, or debt management tools, through a unified data architecture, they become Integrated FMIS (IFMIS), supporting (in principle) seamless budget execution cycles and real-time oversight (Cem et al., 2011; World Bank, 2025; World Bank Group, 2015)

Digital PFM refers to the application of digital technologies and design principles to modernize and enhance existing PFM systems and meet current user needs (not just ministries of finance as users but also citizens as end users). Building on FMIS and IFMIS, digital PFM shifts from automating individual processes to reimagining the entire PFM ecosystem through modular, interoperable, and user-centred architectures. It incorporates real-time data flows, open standards, and agile implementation practices, often linking with broader digital governance and service delivery platforms. The concept was introduced by ODI Global, which frames **digital PFM as an emerging paradigm that applies platform thinking and iterative design to make PFM systems more flexible, transparent, and responsive** (Long et al., 2023; Long & Naik, 2025). In this framing, digital PFM is not merely a technological upgrade: it represents a strategic and institutional shift that enables more participatory, accountable, and adaptive public finance governance.

Fiscal DPI encompasses not only the digitalization of fiscal functions, but also the foundational infrastructure and the governance architecture needed to ensure transparency, participation, accountability, and inclusion (TPAI) in PFM. It covers both what currently exists and what is aspired to in well-designed systems — in other words, it is both a descriptive concept and an aspirational framework for how fiscal digital systems should operate to maximize governance outcomes at all stages of PFM. Specifically, fiscal DPI can be understood as comprising three interrelated layers:

- **Core systems:** Digital platforms that support all stages of the budget cycle⁶ for a wide range of users including citizens (beyond only ministries of finance or planning). In best practice, these systems would go beyond basic automation to achieve integration, interoperability, and real-time use and oversight.
- **Governance tools:** Legal and institutional requirements and safeguards, technical standards, transparency portals, compliance and audit mechanisms, and structured spaces for citizen engagement and feedback (in all stages of system design, acquisition and deployment). These features embed accountability and rights protection directly into all stages of deployment and operations of fiscal systems.

⁶ The term “all stages of the budget cycle” refers to the complete sequence of fiscal policy and management processes undertaken by governments and public entities. These typically include medium-term and annual planning; resource mobilization; annual budget formulation and legislative approval; execution and management of expenditures; procurement; accounting and financial reporting; and internal and external audit, followed by evaluation. Collectively, often described as the core functions of Public Financial Management (PFM), these stages are designed to ensure that public resources are mobilized, allocated, spent, tracked, and scrutinized in accordance with legal and institutional frameworks and policy objectives. Comprehensive digital platforms (such as FMIS/IFMIS, e-procurement systems, and government-to-person (G2P) or government-to-business (G2B) payment platforms) aim to support and integrate each stage, thereby advancing TPAI in fiscal governance.

- **Data infrastructure:** The registries, identity and verification tools, digital payment platforms, and interoperability frameworks that allow fiscal systems to exchange and validate information securely. While some elements, such as an interoperability framework or a payments system, serve distinct functions; others, such as registries, do not in themselves guarantee privacy or accessibility. In the best-case scenario, this layer is built on interoperable standards that ensure data integrity, enable secure sharing, and protect privacy while supporting accessibility across fiscal platforms.

While Digital PFM reflects a broader paradigm shift in how PFM systems are conceived, designed, and managed, fiscal DPI focuses more narrowly on the underlying digital infrastructure and interoperable components that enable fiscal governance across the full ecosystem of users, from ministries and service delivery agencies to oversight bodies and the public.

Table 1. Digital PFM vs. Fiscal DPI

Feature	Digital PFM (the WHAT)	Fiscal DPI (the HOW and WHERE)
Purpose	To make PFM systems more transparent, adaptive, and participatory through iterative and user-driven transformation.	To enable fiscal transparency, efficiency, and accountability through interoperable and re-usable digital systems.
Origin	Introduced by (Long et al., 2023) as a public sector innovation approach informed by platform thinking and modular design.	Emerged from global DPI discourse, focused on scalable, reusable systems anchored in standards for infrastructure, data, and governance safeguards. (and ideally including standards for citizen participation)
Nature	Conceptual and design paradigm for rethinking how PFM systems are structured, governed, and implemented; emphasizes flexibility and transformation.	The operational digital infrastructure stack that delivers core fiscal functions (planning, execution, audit) and respective governance processes.
Scope of Influence	Encompasses the PFM ecosystem within government, primarily led by ministries of finance, focusing on policies and workflows.	Cross-governmental and citizen-facing systems spanning the whole budget cycle, including external actors like oversight bodies, parliaments, media and the public in general.
Design Principles	Interoperability, openness, user-centricity (by and for government actors), iterative delivery, modularity. A more design-focused approach. Aspirational, participatory and agile.	Integrity, scalability, security, compliance, system-level safeguards; aspirationally, accessible, rights-based, and inclusive by design.
Governance Features	Aims to embed transparency, participation, and accountability, but practical implementation often lags technical reforms.	Built-in safeguards (grievance redress, public dashboards, audit trails, citizen feedback); integration with civic actors varies by context.
Current Challenges and Risks	Risk of exclusion if participatory design and open standards are not systematically adopted; vendor lock-in and siloed upgrades possible.	Governance gaps persist in many systems: lack of public dashboards, weak civic oversight, limited interoperability, risks of surveillance.
Examples	Modular IFMIS upgrades, Application Programming Interfaces (APIs) for real-time budget monitoring, agile planning platforms, and citizen-facing dashboards.	Interoperable, shared and re-usable FMIS/IFMIS (modular or as a whole), e-procurement systems, digital payments, audit dashboards, and grievance redress portals.

Governments, development banks, philanthropic funders, and the private sector are increasingly investing in the development and deployment of digital systems and platforms in public finance.

These investments are typically justified by their potential to improve efficiency, reduce leakage, and enhance service quality, while also expanding cost-effectiveness, accessibility, and reach. CSOs and Non-Governmental Organization (NGOs), although not always involved in system design or financing, are engaging with these platforms to promote service delivery coverage, promote transparency, monitor implementation, and advocate for stronger accountability and inclusion. However, the governance implications of such systems, particularly in relation to TPAI outcomes, remain underexplored. Stakeholders interviewed for this scoping exercise noted that many existing fiscal systems, especially IFMIS and digital payment platforms, still lack public-facing dashboards or other accessible user interfaces for citizen participation, information and oversight, thereby limiting their transparency and participatory potential.

4. Fiscal DPI Architecture: Systems, Standards, and Safeguards

About Digital Public Goods (DPGs)

As the concept of DPI continues to evolve, it increasingly intersects with related innovations such as open-source platforms and modular tools. Among these, DPGs have gained prominence as foundational digital assets that can be adapted and scaled across governance, service delivery, and accountability systems.

Understanding how DPGs relate to, and differ from, DPI is essential for clarifying the digital transformation landscape in the public sector, especially fiscal governance. The evolving relationship between DPGs and DPI marks a shift from viewing open code as a standalone innovation to recognizing infrastructure as a vehicle for democratic governance and systemic inclusion (Clark et al., 2025; United Nations, 2020; United Nations Development Programme (UNDP), 2023; World Bank, 2024).

DPGs are typically open-source software, data, or content assets that meet standards for accessibility, reusability, and inclusion. The UN and DPGA define DPGs as **modular building blocks**, such as open-source fiscal transparency dashboards, procurement standards (e.g., Open Contracting Data Standard), or budget tracking tools, that can be integrated into larger DPI systems.

While the Digital Public Goods Alliance (Digital Public Goods Alliance, 2024) recognizes DPGs for their ability to advance the Sustainable Development Goals (SDGs), these assets are not limited to that purpose. In practice, DPGs also underpin a broader range of governance, public service, and civic tech applications. For example, they may improve fiscal transparency and procurement efficiency, strengthen digital ID systems, or enhance localized service delivery. Their adaptability makes them valuable across multiple domains, including crisis response, democratic engagement, and digital innovation.

DPGs offer modular, open-source solutions; DPI refers to the broader, integrated, and interoperable systems that enable core digital functions for all, governed by public mandates, legal frameworks, and technical standards.

DPI refers to the integrated and often government-mandated systems, like identification networks, payment architectures, or integrated e-procurement platforms, that deliver core functions at scale. While DPI systems may incorporate DPGs as core modules or standards, the entire system is not usually considered a DPG unless all major components are open-source and freely reusable according to DPG criteria. In fiscal governance, DPGs such as Open Contracting Data Standard (OCDS), OpenSpending, BOOST, and Comprehensive Knowledge Archive Network

(CKAN) provide critical standards or modules for budget transparency, data publication, and citizen monitoring when embedded into legal and technical frameworks governing DPI.

In the fiscal domain, DPGs such as the OCDS⁷ and the BOOST⁸ Public Expenditure Database can be embedded within broader fiscal DPI systems to enhance transparency, citizen engagement, and service delivery monitoring. When integrated into legally mandated and publicly governed digital ecosystems, these tools amplify the accountability potential of fiscal systems

Other DPGs, including OpenSpending,⁹ GovStack's Fiscal Management Building Blocks,¹⁰ the CKAN,¹¹ TolaData,¹² and DIGIT,¹³ are increasingly being adopted as part of fiscal DPI ecosystems. These tools offer reusable, open-source infrastructure for budget transparency, results tracking, public financial data publication, and payments, particularly when aligned with coherent legal, institutional, and technical frameworks.

Table 2. DPGs vs DPI in Fiscal Governance

Aspect	DPGs	DPI
Definition	Modular open-source software, data, or content assets; reusable, accessible, inclusive.	Integrated systems/platforms providing core digital functions; interoperable, re-usable and governed at scale.
Examples	OCDS, BOOST, OpenSpending, CKAN, TolaData, modular fiscal dashboards.	E-procurement platforms, national ID systems, payment architectures, fiscal DPI.
Relationship	DPGs can be embedded within DPI to provide standards, tools, or modules.	DPI may incorporate multiple DPGs but is broader and often mixes open/proprietary.
Sources	UN, DPGA definitions emphasize DPG as building block, open-source, not whole system.	DPI defined by UNDP, World Bank as core infrastructure, typically multisectoral and

⁷ The OCDS was launched in 2015 by the Open Contracting Partnership (OCP) to standardize how governments publish data and documents related to the planning, procurement, and implementation of public contracts. OCP is an independent non-profit organization established in 2015 to promote transparency, participation, and accountability in public procurement. Designed to improve transparency, efficiency, and accountability, OCDS is now used or piloted in over 40 countries. It enables governments, civil society, and businesses to monitor procurement processes in real time, supporting anti-corruption and open governance objectives. More information is available [here](#).

⁸ The BOOST Initiative, established by the World Bank around 2010, provides countries with tools and technical support to extract, clean, and publish disaggregated government expenditure data from IFMIS. BOOST datasets, which are available in machine-readable formats, have been published for over 70 countries. These datasets can support evidence-based policymaking, fiscal transparency, and public expenditure tracking. BOOST is considered a DPG due to its open-access methodology and reusability, and it serves as a foundation for fiscal transparency dashboards and citizen engagement platforms. Learn more [here](#).

⁹ OpenSpending is an open-source platform developed by the Open Knowledge Foundation that supports the publication and visualization of government budget and expenditure data. It aims to make fiscal information more accessible and understandable to the public and has been adopted in countries including Mexico, South Africa, and the United Kingdom. See [here](#).

¹⁰ GovStack is a global initiative co-led by GIZ, the International Telecommunication Union (ITU), the Digital Impact Alliance (DIAL), and the Government of Estonia. It defines modular, interoperable building blocks for digital government services, including a "Fiscal Management" component designed to support core PFM functions such as invoicing, payments, and accounting. See [here](#).

¹¹ CKAN is a widely adopted open-source platform for publishing open data. Managed by the Open Knowledge Foundation, it powers many national and subnational open data portals, including those with fiscal datasets, such as budget and procurement data. See [here](#).

¹² TolaData is an open-source results-based monitoring and evaluation platform designed to track development project outcomes and link them to budget inputs. It enables better performance monitoring and supports transparency in aid and government spending. See [here](#).

¹³ DIGIT, developed by India's eGov Foundation, is an open-source platform for digitizing municipal services, including property taxes, water billing, and payments. It has been implemented in over 600 Indian cities and provides critical infrastructure for local fiscal systems. See [here](#).

Aspect	DPGs	DPI
		encompassing several building blocks at the same time.

Standards for DPI Design and Interoperability

Standards, ranging from open Application Programming Interfaces (APIs) and data schemas to authentication protocols,¹⁴ serve as the connective tissue that enables modular platforms to communicate, scale, and evolve without vendor lock-in. In fiscal systems, these standards underpin everything from budget classification (e.g., Classification of the Functions of Government (COFOG) and BOOST budget and expenditure formats) and procurement disclosure (e.g., OCDS) to cross-border payment protocols (e.g., ISO 20022).

The success of fiscal DPI depends not only on the existence of digital systems but also on the use of robust, open, and interoperable standards to share the contents produced by individual system and to connect system with each other. More than half of the interviewees emphasized the importance of modular and interoperable DPI components, particularly APIs and open standards, to avoid lock-in and ensure the future proofing of fiscal systems.

Global initiatives such as GovStack and the G20 DPI Framework developed under India (G20 Digital Economy Ministers, 2023; United Nations Development Programme, 2023; United Nations Development Programme (UNDP), 2023) have reinforced the importance of designing DPI with a “building blocks” approach,¹⁵ promoting reusability, composability, and local adaptability.¹⁶ Standards (such as open APIs, data schemas, authentication protocols, and fiscal data standards like COFOG, BOOST, and OCDS) not only enable technical performance but also embed principles of transparency, competition, and inclusivity into system architecture.

Without enforceable and inclusive standards, fiscal DPI risks becoming siloed, opaque, difficult to audit, and unable to adapt to evolving governance needs. Or in other words, we would not advance from evolving digital PFM systems to fiscal DPI. Responsibility for establishing and upholding these standards spans multiple actors, including the following.

- National governments play a central role by mandating standards through legislation, regulation, and public procurement rules.
- Standard-setting bodies such as the IMF, International Organization for Standardization (ISO), PEFA Secretariat, and the Organization for Economic Co-operation and Development (OECD) provide technical and functional benchmarks.
- Multilateral institutions and donors, including the World Bank and regional development banks, can reinforce these standards through financing conditions and technical support.

¹⁴ These terms refer to key technical components that enable different digital systems to work together securely and transparently. Open APIs (Application Programming Interfaces) allow different software applications to communicate and share data. Data schemas define the structure and format of data to ensure consistency and usability across platforms. Authentication protocols are the rules and systems used to verify the identity of users or systems, ensuring secure access to information and services.

¹⁵ The “building blocks” approach refers to designing digital systems as modular components—such as identity, payments, registries, and credentials—that can be reused, recombined, and adapted across different services and sectors. This approach enables interoperability, scalability, and local customization, while reducing duplication and vendor lock-in.

¹⁶ Reusability refers to the ability to apply the same digital components (e.g., payment systems and identity verification tools) across multiple use cases or services. Composability allows these components to be flexibly combined or integrated with others to create new solutions. Local adaptability ensures that systems can be tailored to specific country or sectoral contexts and reflect different legal frameworks, languages, capacities, and governance needs while still adhering to common standards.

- Open standards communities like OCDS and GovStack contribute by maintaining and updating public digital tools, while CSOs help monitor implementation and advocate for transparent, rights-based governance.

Safeguards for Rights-Based and Inclusive fiscal DPI

Safeguards are the legal, institutional, and technical measures embedded in DPI to protect rights, ensure inclusion, prevent harm, and uphold accountability. In the fiscal domain, these span a continuum from hard regulatory requirements to softer, participatory mechanisms, including data protection laws, grievance redress systems, exclusion audits, algorithmic transparency requirements, and mandates for public participation. The United Nations DPI Universal Safeguards Framework (United National Development Programme (UNDP) & Office of the Secretary-General's Envoy on Technology (OSET), 2024) highlights that effective safeguards should cut across the design, deployment, and use of fiscal DPI to address risk, define responsible actors, and operationalize core principles throughout the system lifecycle.

Despite their importance, safeguards are often under-prioritized in the design and implementation of fiscal DPI. Attention and resources typically focus on efficiency and technical soundness, while rights, participation, and redress mechanisms are treated as peripheral or retrofitted late in the process. Interview findings and recent literature emphasize that the absence of proactive safeguards is a critical risk: without them, fiscal DPI can amplify surveillance, institutionalize exclusion (for example, via flawed eligibility algorithms or inaccessible interfaces), and make public funds flows less transparent and harder to contest.

As ODI Global and CABRI (Oriol & Ferreira, 2025)(Collaborative Africa Budget Reform Initiative (CABRI) & ODI Global, 2024) note, rollouts that fail to invest in grievance and audit mechanisms or end-user participation are more likely to embed harm at scale. Establishing standards for both infrastructure design and user safeguards from the outset is not only more cost-effective and politically feasible but is also necessary for ethical, sustainable reforms. If governance is not embedded at design, fixing harm later becomes more costly, less legitimate, and less likely. Key safeguard elements include:

- **Data protection and privacy:** Legislative frameworks, technical controls, and operational policies to ensure that personal and financial data are collected, processed, and shared lawfully, securely, and with meaningful consent.
- **Grievance redress and exclusion audits¹⁷:** Mechanisms for users to contest decisions and access remedies, and routine assessments to identify and address which groups may be left out or harmed by system design, accessibility barriers, or eligibility rules.
- **Transparency and accountability standards:** Public disclosure of algorithms, open access to system rules and datasets where appropriate, and regular independent audit and oversight.
- **Participation and engagement:** Structured avenues for civil society, end-users, and oversight bodies (such as supreme audit institutions and parliaments) to participate from system design to ongoing monitoring.

¹⁷ Exclusion audits are assessments designed to identify which groups, such as women, rural populations, persons with disabilities, or informal workers, are left out of DPI systems. These audits examine barriers related to access, design, language, technology, legal identity, and user interface, helping ensure that systems are inclusive and equitable.

Absent such safeguards, fiscal DPI can unintentionally undermine equity, entrench opacity, and erode public trust, particularly in systems that handle sensitive data or allocate benefits to marginalized groups. Good practices increasingly call for participatory, rights-based approaches as a precondition, not an afterthought, of fiscal digitalization.

Data governance is therefore not a technical compliance challenge but a foundational political and ethical choice. The integration of safeguards should be systematic, enforceable, and context-sensitive, reflecting both international standards and localized needs. Later sections (notably Sections 5 and 6) further examine the implications of missing safeguards for trust, legitimacy, and democratic accountability, and suggest pathways for embedding them, by design, into the next generation of fiscal digital infrastructure.

Data Protection, Sovereignty, and Legal Models: Implications for Fiscal DPI

As fiscal DPI systems evolve, they increasingly interact with cross-border data flows, global standards, and regional platforms. These dynamics raise critical questions around data protection, sovereignty, interoperability, and legal compatibility. Throughout the scoping interviews, stakeholders consistently argued that data governance is not an afterthought in DPI, it is central to inclusion, consent, and institutional trust.

Interviewees reinforced that data governance is foundational to the legitimacy and accountability of fiscal DPI. Key concerns include:

- (a) Absence of safeguards and frameworks to embed data protection and grievance mechanisms from the outset.
- (b) Difficulty achieving interoperability in regions where data protection and privacy laws are either weak or highly divergent, resulting in legal uncertainty about sharing and aligning data across jurisdictions.
- (c) Imported legal and technical standards by donor-funded platforms without effective adaptation to local rights frameworks, potentially undermining domestic ownership and legitimacy.
- (d) Ongoing ambiguities in mandates, data-sharing rules, and consent protocols regarding public data and digital IDs, limiting transparency, user agency, and meaningful participation.

Several interviewed experts warned that opaque data handling, lack of redress mechanisms, and weak alignment with domestic legal norms have already led to exclusion, misuse, or backlash in some deployments.

Data protection regimes differ markedly across regions, creating friction with global or regional DPI initiatives (United Nations Development Programme (UNDP) & Office of the Secretary-General's Envoy on Technology (OSET), 2024) (International Telecommunication Union (ITU), 2024):

- The EU's General Data Protection Regulation (GDPR) enforces rights-based controls, requiring explicit consent, data minimization, and robust governance of cross-border transfers.
- The US favors a sectoral model with weaker central enforcement and broad public-private data flows.
- India's Digital Personal Data Protection Act (2023) introduces user rights and consent but provides broad exemptions for government access and places its data authority under executive control, prompting critiques about enforcement independence.
- African states are negotiating trade-offs between national sovereignty and regional interoperability, such as under the African Union's Malabo Convention or the Southern Africa Development Community (SADC) DigiPass initiative. Recent OECD and AU research highlights how these tensions slow the rollout of truly interoperable identity or fiscal systems.

These legal and regulatory mismatches have direct implications for fiscal DPI: they determine how financial management systems share subsidy or procurement data, whether citizen-facing platforms can be locally adapted and protected, and whether users have recourse when harms occur.

The IMF and others have recently explored privacy-enhancing technologies (PETs). PETs can strengthen user trust and compliance by securing data sharing and mitigating profiling risks, but they introduce new complexities and cannot substitute for robust data governance or harmonized legal regimes.

Data governance is not only a technical or compliance issue but a fundamental design and political choice. It shapes who is visible and empowered in digital systems, and who benefits from fiscal digitalization. Integrating privacy and data protection measures must be a baseline for fiscal DPI, especially for systems handling sensitive financial or welfare data.

5. Systemic Challenges, Risks, Tensions and Trade Offs

Systemic Challenges

Despite the growing adoption of digital platforms in public finance, critical governance features continue to lag technical development. Current fiscal DPI systems frequently prioritize automation, efficiency, and scale, while safeguards for TPAI are underdeveloped or treated as secondary. Multiple interviewees and recent global research (e.g. WFD, ODI Global, CABRI) consistently highlight these deficits as core risks to the legitimacy and effectiveness of fiscal digitalization.

To foreground the key governance gaps in practice, Table below brings together the most frequently cited challenges identified by funders, civic actors, technical implementers, and reform partners.

Although DPI-enabled PFM systems are often promoted as tools to strengthen fiscal discipline, strategic allocation of resources, and efficiency in service delivery, their democratic governance implications have frequently lagged technical development. Recent research from the Westminster Foundation for Democracy (WFD) underscores the essential role of digital technologies in enhancing democratic resilience and supporting transformation in governance (Scales et al., 2025).

Governance features are important and reflect legitimate prioritization of basic functionality and service delivery in resource-constrained environments. The challenge is to find approaches that integrate both efficiency and governance objectives rather than treating them as competing priorities.

The IMF's Digitalization and Public Finance blog has noted that "the synergies and interactions between the digitalization of public finances and DPI concepts and applications have not yet been sufficiently explored" (Uña, 2022).

A recent working paper by Long and others at ODI Global (2023) titled "Digital Public Finance: An Emerging Paradigm" highlights that many digital investments in PFM have prioritized efficiency but seldom include features that support civic participation, user feedback, or inclusive monitoring. The report calls for a shift toward open technology architecture as part of a broader ecosystem of shared digital infrastructure, data, and services that support equity and responsiveness. This is because open systems, unlike proprietary platforms, enable greater

transparency, reduce vendor lock-in, and make it easier for civic actors to access and reuse public data, participate in co-design, and hold institutions accountable.

Similar concerns were echoed at the Collaborative Africa Budget Reform Initiative (CABRI)–ODI Conference on Digital Public Finance (November 2024), where participants acknowledged that while interest in digital PFM is growing, important issues such as standards, safeguards, participation, and real-world governance outcomes are still not systematically addressed in current reform agendas. The Bennett Institute for Public Policy (Eaves et al., 2025) further notes that DPI is often deployed in ways that reinforce power asymmetries. Multiple informants warned that civil society participation is often treated as symbolic, with little to no influence over technical design or decision-making processes.

Citizens are increasingly required to interact with digital systems to access essential services, even when those systems may exclude vulnerable groups or enable surveillance. These disconnects between the democratic promise of DPI, and its operational reality have led to a situation in which the governance, inclusion, and civic oversight dimensions of fiscal DPI remain understudied and under-addressed.

Current rights-based critiques from global civil society highlight that DPI rollouts, especially in the Global South, often lack adequate safeguards and tend to treat populations as testing grounds for new and sometimes invasive digital systems. The lack of robust grievance redress, fragmented accountability across providers, and insufficient regulation allows exclusion and rights violations to persist, especially among marginalized populations.

Workshops at RightsCon 2025 and research from The Quantum Hub stress that meaningful inclusion, proportionate data sharing, and agency for affected individuals and communities are prerequisites for trust in DPI (National Institute of Strategic Resilience et al., 2025). They recommend structural safeguards over narrow, consent-based frameworks and urge that inclusion be “by design,” not an afterthought. They also caution against DPI rollouts that “turn populations into experimental grounds” when they have inadequate regulation, safeguards, and consultations (Long & Naik, 2025)

WFD’s global pilots reveal that the design and deployment of digital approaches can significantly strengthen democratic practices especially when pairing technology with robust safeguards, inclusive participation mechanisms, and iterative learning pathways. Their findings emphasize that effective digital democracy initiatives require continuous collaboration between technologists, civil society, and policymakers, and must actively anticipate risks such as exclusion, disinformation, or the misuse of data. Building democratic resilience in the digital era thus demands not only investment in tools but deliberate strategies to foster trust, ensure transparency, and enable inclusive engagement throughout the policy and implementation cycle.

Drawing from literature reviewed and from the in-depth interviews conducted between April and May 2025, this table distills the most frequently cited themes and concerns raised by funders, civic actors, technical implementers, and reform partners working at the intersection of DPI, fiscal governance, and public accountability. The findings highlight where current fiscal DPI efforts fall short and what is needed to embed TPAI more effectively.

Table 3. Insights from Interviews Related to Systemic Challenges

Theme	Insight
Safeguards	Many fiscal DPI deployments lack built-in grievance redress mechanisms, data protection frameworks, or safeguards for marginalized users.
Participation	Inclusion audits and meaningful participation mechanisms are often absent or introduced too late to influence design and implementation.
Modularity & Interoperability	Open APIs, shared standards, and modular system design are essential to avoiding vendor lock-in and ensuring adaptability across contexts.
Civic Intermediaries	Funding and capacity support for civic tech actors, watchdog organizations, and other that can act as technology brokers and information translators remains insufficient.
Public Interfaces	IFMIS and government-to-person (G2P) platforms frequently lack public-facing dashboards or accessible tools for citizens, parliaments, and oversight institutions.
Tokenistic Engagement	Civil society participation is often symbolic or limited to late-stage consultations that do not influence core system or policy design.
Donor-Led Agendas	Donor priorities can override local accountability objectives, weakening alignment with country governance needs.
DPI vs. Neutral Technology	DPI systems reflect underlying values where design choices shape who has access, visibility, and voice in fiscal governance.

The interviews surfaced recurring language that reflects how stakeholders perceive the risks, power dynamics, and governance challenges in fiscal DPI. These phrases offer insight into the lived experience and political framing of DPI implementation:

- "Infrastructure without voice"
- "Safeguards (protection) by design"
- "Who sees, who decides, who benefits?"
- "Civic architecture is missing"
- "We're automating opacity"

Together, these expressions highlight the growing concern that digital fiscal systems may reinforce exclusion or unaccountable power unless deliberately shaped by principles of transparency, participation, and equity from the outset.

Digital Dependency, Sovereignty, and Infrastructure Risks

Recent events in Africa have underscored the risks of foreign dependency in DPI, particularly when critical national systems are hosted on external servers. For example, Kenya's sudden loss of access to its health information platforms, following US funding decisions, exposed the national vulnerability created by overseas data hosting. This incident demonstrates that digital infrastructure is not only a technical concern, but a matter of national security and sovereignty.

Experts argue that such dependencies can rapidly disrupt essential public services and decision-making, echoing calls for African nations to launch immediate audits of their critical digital systems and invest in domestic or regional infrastructures to prevent future disruptions. Regionally anchored solutions, backed by joint investments (like Africa's new commitment to distributed "sovereign compute infrastructure" and a \$60 billion Africa AI Fund), are increasingly viewed as necessary for long-term resilience and independence in the digital era.

Strategic Tensions and Trade-Offs

Understanding local political economies is essential to designing and implementing fiscal DPI in ways that are responsive to real-world governance dynamics. Power asymmetries, institutional

incentives, and informal norms often shape how digital systems are acquired, adopted, used, or resisted. Reforms that ignore these dynamics risk entrenching exclusion or failing to gain traction, no matter how technically sound the design.

Funders, technical assistance providers, civic intermediaries, and reform partners often enter this space with a mandate to promote effectiveness and scale but not always with frameworks for navigating the political economy and social trade-offs inherent in these transformations. Research highlights that traditional PFM funding models often lack mechanisms to surface and manage these trade-offs (Long, 2024; Long & Naik, 2025; Madhukar, 2021; Peixoto & Fox, 2016). Analysts from the United Nations Capital Development Fund's (UNCDF) Policy Accelerator further emphasize that these trade-offs (what they call "high-priority regulatory and policy issues" in DPI) require deliberate governance choices and contextual design, not just technical implementation (United Nations, 2020; United Nations Development Programme (UNDP), 2023).

The following table outlines some of the pressing strategic tensions at the heart of fiscal DPI design and deployment, revealing how technical choices become governance decisions and how funders can either help mitigate systemic inequities or inadvertently reinforce them.

Table 4. Tensions and trade-offs in values for DPI implementation

Tension		Example
Efficiency vs. Inclusion	Tension between rapid delivery of G2P payments and the exclusion of vulnerable groups lacking ID or digital access.	In India's Aadhaar-linked Public Distribution System, biometric failures ranged from 36% to 49% in Jharkhand State, disproportionately affecting elderly and informal workers. (Khalid & Khera, 2017) (Khera, 2019)
Centralization vs. Participation	Tension between standardized treasury-run systems and decentralized models that allow for citizen participation.	Brazil's participatory budgeting platforms offer contrast to the lack of citizens and community participation. Porto Alegre's digital Participatory Budgeting system allows citizens to allocate up to 20% of the municipal investment budget, contrasting with centralized federal systems that offer no direct input mechanisms. (Gilman & Wampler, 2019)
Technical Control vs. Public Value	Tension between vendor-controlled proprietary systems and open systems that enable reuse, oversight, and cost savings.	Serbia's e-procurement system transitioned to open-source code in 2017, resulting in 20% cost savings and enabling CSO-led contract monitoring (European Commission, 2022)
Data Sovereignty vs. Integration	Tension between national data localization policies and the need for cross-border data interoperability.	The OECD highlights challenges in aligning African digital infrastructure initiatives with global data-sharing norms. (Organization for Economic Co-operation and Development (OECD), 2019)
Privacy vs. Transparency	Tension between protecting citizen data and enabling public scrutiny of fiscal targeting and spending.	South Africa's COVID-19 grant rollout raised privacy concerns due to opaque verification processes, sparking public debate and leading to reforms. (Blackmore & Fjeldstad, 2025) (Organization Undoing Tax Abuse (OUTA), 2020)
Standardization vs. Local Adaptation	Tension between applying universal digital standards and adapting systems to local languages, cultures, and institutional contexts.	In Jakarta, an e-notification system for land and building tax launched in 2021 issued thousands of alerts, but only 87.5% were successfully downloaded due to barriers in access and literacy. (Labib Zulfikar et al., 2024)

Tension		Example
Speed vs. Safeguards	Tension between rapid deployment and the time needed to establish accountability mechanisms and inclusion testing.	The Philippines' COVID-19 cash transfer reached 18 million households in two months, but only 6% of grievances were resolved due to weak complaint channels. (Cho et al., 2021)
Innovation vs. Stability	Tension between adopting new technologies and maintaining systems that are stable, trusted, and usable by low-tech populations.	Nigeria launched an e-wallet voucher system for fertilizer subsidies that reached 4.3 million farmers by 2013 and reduced per-farmer delivery costs from USD \$225–300 to \$22. It was done alongside the introduction of PIN-enabled ID cards for subsidies, loans, and grants. (Alabi & Adams, 2020)

These tensions are not accidental: they reflect policy choices. Each represents a spectrum rather than a binary, and the optimal balance depends on the context, capacity, and level of democratic maturity. The key is making these choices explicit and deliberate rather than allowing technical defaults to determine democratic governance outcomes.

Funders are actively participating in setting priorities and requirements and should be aware of their roles and how they influence these tensions and trade-offs.

In summary, there are critical challenges, risks, tensions and tradeoffs in knowledge, standards, capacity, and accountability frameworks. As seen, some interviewees raised concerns that fiscal DPI agendas are shaped more by donor priorities than by national accountability ecosystems or user needs. Few studies have tracked the TPAI impacts of Digital PFM or fiscal DPI systems over time. No widely adopted governance or participation benchmarks exist for digital fiscal systems. Civic participation and user voice are rarely budget lines in DPI programs. This is a missed opportunity. Funders can catalyze new norms, support the advancement of standards, and promote good practices by supporting pilots, sharing lessons, and embedding governance as a first-order priority in ongoing or upcoming DPI portfolios.

Table 5. Summary of Critical Gaps

Evidence and Benchmarking Gaps. Few studies have tracked the impact of fiscal DPI on TPAI outcomes. There is limited empirical evidence on whether fiscal DPI platforms strengthen TPAI outcomes and how these in turn may influence service delivery. As the IMF (Nose, 2023) and CABRI-ODI (Collaborative Africa Budget Reform Initiative (CABRI) & ODI Global, 2024) have noted, digital finance efforts have primarily focused on systems and efficiency, not on democratic governance outcomes or user equity. Unlike in domains such as procurement or anti-corruption, there are no widely adopted benchmarks for civic participation or public oversight in fiscal DPI systems. ODI (Long et al., 2023; Long & Naik, 2025; Oriol & Ferreira, 2025) and UNDP (United Nations Development Programme (UNDP), 2023) call for defining such standards to operationalize values like inclusion and accountability in digital fiscal governance.

Design and Participation Deficits. Civic engagement, participatory design, inclusive piloting and testing, and grievance mechanisms are rarely included in budgets for fiscal DPI reforms. A review of donor practices by Omidyar Network and Schoemaker (Madhukar, 2021) finds that governance features, when present, are often treated as optional or downstream, rather than as core components. Civil society actors, who are critical to enabling bottom-up accountability and translating data into meaningful oversight, are often absent from both the design, implementation and evaluation stages. This exclusion weakens legitimacy and functionality in contexts where trust in government is already low (Mellon et al., 2022; Sang et al., 2025; United Nations Development Programme (UNDP), 2023). Over two-thirds of interviewees identified the absence of civic intermediaries and funding for end-user capacity as a structural weakness in current DPI efforts.

Recognizing the Political Nature of Design. The scaling of DPI, particularly in fiscal domains, is not politically neutral. While eligibility criteria and program rules are often set by policy or law, the way digital systems operationalize these decisions can embed or exacerbate exclusion. Interviewees across sectors emphasized that design choices in fiscal DPI, such as how data is collected, how eligibility logic¹⁸ is coded, how grievances are processed, or which actors have access to information, can amplify or mitigate structural inequities. Although usually framed in technical terms, fiscal DPI systems carry political implications: they shape who is visible to the state, who qualifies for benefits, who bears fiscal burdens, who can contest decisions, and who is empowered to hold the system accountable.

Patterns to Note

Across interviews and literature reviewed, several recurring patterns emerged that reveal how design decisions in fiscal DPI often shape, limit, or undermine democratic governance outcomes:

Efficiency is prioritized over governance safeguards. Many fiscal DPI systems are designed to automate and accelerate core functions such as budget releases, payments, and procurement with little attention to accountability features. This often reflects capacity constraints and implementation pressures but also a narrow one-sided technical framing of system requirements. In some cases, public officials or procurement teams may lack exposure to rights-based or participatory design principles, and vendors may prioritize cost and speed in delivery over transparency and inclusion, often aligning with the preferences of their most visible client, typically the Ministry of Finance.

There is also often a cultural or institutional gap, where digital systems are viewed as neutral technical tools rather than embedded governance systems that require clear standards, safeguards, and oversight. This framing overlooks the political and institutional implications of system design. As a result, systems are frequently launched without transparency portals, grievance redress mechanisms, or citizen feedback loops, undermining accountability and reinforcing opacity and exclusion (Mellon et al., 2022; Tavares & Masiero, 2023). For example, many IFMIS and government-to-person (G2P) payment platforms are launched primarily with internal-facing dashboards and controls, without providing public-facing portals or real-time transparency functions for citizens, parliament, or oversight bodies. This limits public access to fiscal data and restricts opportunities for external monitoring and feedback, ultimately weakening accountability and citizen trust.

Parliaments, audit institutions, and other oversight bodies are rarely integrated into system design or data flows, or considered as users, despite their critical role in budget oversight and scrutiny, performance monitoring, and ensuring that digital systems uphold public accountability standards.

Civic actors are excluded from the design and piloting processes. Civil society participation remains limited or tokenistic. User communities are often brought in too late to influence vendor selection, system features, or implementation strategies. This erodes public trust and can diminish the system's effectiveness (Madhukar, 2021).

¹⁸ Eligibility logic refers to the set of rules, typically established by policy or law, that determine who qualifies for a public benefit or service. In digital systems, these rules must be translated into operational code or algorithmic filters. While the underlying criteria may be legally defined, the way they are implemented in software (e.g., data inputs, thresholds, and matching rules) introduces technical and design decisions that can influence accuracy, transparency, and the risk of exclusion. Even legally defined eligibility can have different real-world effects depending on how it is encoded and executed by the system.

Governance components are systematically underfunded. While donors and technical partners fund platforms, hardware, and institutional capacity, they often overlook essential governance elements such as grievance mechanisms, exclusion audits, participatory planning and budgeting, and oversight tools (Daub et al., 2020; Foreign, 2024).

The result is a growing governance gap in DPI (including fiscal DPI) rollouts. As infrastructure expands, civic oversight and democratic control often fail to keep pace. This challenge manifests differently across various political contexts. In democratic settings, it appears as insufficient citizen participation and weak accountability mechanisms. In non-democratic regimes, DPI can exacerbate existing power asymmetries by enabling enhanced surveillance, social control, and the exclusion of dissenting voices. Both contexts share common challenges, including constrained fiscal space, limited digital literacy, and high costs of electricity and the internet. However, authoritarian environments pose additional risks, where DPI becomes a tool for regime consolidation rather than public service.

Cross-Cutting Issues

TPAI outcomes are not automatic: they require intentional design. When well-designed, fiscal DPI systems can enhance transparency (e.g., through public budget dashboards), participation (e.g., grievance redress portals), and accountability (e.g., audit trails or real-time procurement monitoring). These outcomes are often assumed, not embedded. Many IFMIS platforms, for example, remain internal-facing and offer no public access to service delivery data (Clark et al., 2025; World Bank, 2024, 2025; World Bank Group, 2015).

Figure 2: About the United Nations Global Digital Compact

Governance is not a downstream consequence of infrastructure design — it is a design choice. This is recognized in the Global Digital Compact accepted at the United Nations Summit of the Future in 2024. The GDC commitments include closing digital divides, investing in DPGs and DPI, building “inclusive, open, safe and secure digital space that respects, protects and promotes human rights,” and advancing “responsible, equitable and interoperable” data governance, among others. It notes that accountability needs to occur even at the “pre-design” phases through development, testing, deployment, etc. It calls for safeguards, civic participation, and accountability mechanisms to be embedded from the outset, not retrofitted later. The process for implementing and reviewing the GDC is ongoing. Visit the GDC website (<https://www.un.org/global-digital-compact/en>) for more.

Technical design choices either enable or constrain civic participation and oversight. Decisions about system architecture, such as whether platforms are open or closed, interoperable or siloed, vendor-locked or modular, have far-reaching governance implications. Design features like multilingual accessibility, offline functionality, and the use of open APIs determine who can access, afford, understand, and monitor fiscal data. Yet these decisions are rarely made with input from oversight bodies, such as parliamentary committees, SAIs, civil society advisory bodies, or citizen panels. In many deployments, technical decisions are taken exclusively by ministries of finance or governments digital agencies, with limited opportunities for public comment or scrutiny. This can result in systems that are efficient but opaque, excluding not only end users but also the institutions mandated to ensure public oversight, scrutiny and accountability.

For example, G2P systems that rely on biometric ID verification without adequate safeguards often exclude vulnerable populations (Eaves et al., 2025; Mukherjee & Maruwada, 2021; Schoemaker, 2023), and without independent monitoring or grievance channels, these harms go unaddressed. To ensure civic oversight, technical design processes must deliberately include transparency-by-

design principles, ensure auditability, and create interfaces or documented data pipelines that enable parliaments, audit offices, and citizens to scrutinize digital public finance systems in real time.

Civic intermediaries are essential but chronically unsupported. Digital infrastructure alone does not generate accountability. Civil society watchdogs, social enterprises, investigative journalists, legal advocates, and community monitors play a critical role in interpreting data, surfacing misuse, and translating complex fiscal information into actionable oversight. Yet these actors are routinely under-resourced and excluded from fiscal DPI design, implementation, and evaluation processes (Chaudhuri, 2023; Löffler, 2025; National Institute of Strategic Resilience et al., 2025; Patel et al., 2013). Without their active engagement, data remains underutilized, platforms underused, and accountability mechanisms weakened, undermining the very purpose of digital fiscal transparency.

The implications are clear: governance must be embedded by design, not added as an afterthought. Funders and reform partners have a critical opportunity to change course by investing in diagnostics, setting shared benchmarks, and ensuring that civic participation and user agency are built into the very DNA of fiscal DPI.

6. What Funders Can Do

In this section, we use the term “funders” to refer broadly to the diverse set of actors who provide financial and technical support for the design, deployment, or oversight of Fiscal DPI systems. This includes international financial institutions (IFIs) such as the World Bank and IMF, bilateral development partners, and philanthropic foundations. While these actors differ in mandate and influence, they all play critical roles in shaping priorities, funding mechanisms, institutional norms, and civil society engagement strategies. The recommendations below are intended to be adaptable and to take account of different comparative advantages and responsibilities.

The growing influence of funders and reform partners in shaping DPI presents a critical opportunity and responsibility to steer fiscal DPI toward more inclusive, accountable, and participatory outcomes. Lessons from the civic tech and open data movements suggest that when legal mandates, long-term engagement, or institutional ownership are lacking, system-wide impact is limited. Based on interview insights and the literature review, three strategic roles for funders emerge, with differentiated entry points depending on mandate and leverage:

Embed Governance into Fiscal DPI. Too often, governance features such as transparency modules, grievance redress systems, or citizen feedback loops are left out of DPI by design or treated as downstream add-ons. Funders can shift this norm by ensuring that accountability, inclusion, and participation are built into the foundations of fiscal DPI.

Actions:

- Support the integration of transparency portals, audit trails, and user or citizen feedback mechanisms into core systems (e.g., FMIS, e-procurement, and social transfer registries).
- Fund pilot initiatives that demonstrate the feasibility and value of embedding TPAI elements early in system design.
- Promote the inclusion of good practice guidance, technical standards, and conditional funding benchmarks that center governance outcomes.

- Encourage human-centred design including multilingual interfaces, mobile-first tools, and accessibility features for excluded populations.

Tailored Roles:

- IFIs can shape system design upstream by, for example, linking governance features to public investment frameworks, PFM diagnostics, and lending conditionalities.
- Bilateral donors can support policy dialogue, co-creation processes, and capacity-building to institutionalize participatory approaches.¹⁹
- Philanthropic actors are well-positioned to fund catalytic experimentation, ideation, and civil society participation mechanisms that feed into public systems.

Empower Civic Actors, Reform Partners, and Intermediaries. DPI cannot deliver on its public interest goals without active civic engagement. Funders can invest in the institutions, coalitions, and intermediaries that translate technical data into public dialogue and enable civic usage and oversight. This includes strengthening the demand side of fiscal transparency and ensuring communities have the tools, skills, and spaces to engage.

Actions:

- Support CSOs, civic tech groups, and watchdog networks to participate in the co-design, monitoring, and evaluation of fiscal DPI systems.
- Enable the development and scaling of civic tools, prototypes, and interfaces not by building them directly, but by funding the actors and platforms that can translate technical systems into accessible, user-driven formats.
- Invest in digital literacy training, fiscal transparency tools, and capacity-building initiatives not only for user communities (particularly at the local level) but also for institutional actors such as parliamentary committees, oversight bodies, and advisory councils tasked with ensuring accountability and public engagement.
- Strengthen institutional pathways for participatory budgeting, social audits, and structured feedback loops, while also supporting experimentation with new accountability mechanisms that respect rights, leverage digital tools, and are co-created with users to better reflect evolving civic needs and local governance contexts.

Drive Accountability Through Standards, Culture and Mindset Change, and Collaborative Learning. Funders can help define what good governance looks like in Fiscal DPI by shaping procurement norms and embedding safeguards in diagnostics. They can also enable spaces for experimentation and peer learning as technical reforms alone are insufficient. Lasting accountability requires shifting the mindsets, incentives, and institutional cultures of those designing, procuring, and implementing these systems from ministries of finance to technology vendors.

Actions:

- **Institutionalize governance standards:**
 - Require open standards, vendor-neutral architecture, and modular procurement approaches that allow systems to be built in components. This enables iterative design and better scrutiny of each module, as well as reducing dependence on a single vendor, enhancing transparency, flexibility, and accountability.

¹⁹ This fits with the OECD's Network on Governance (2024) recommendation for bilateral partners to build capacity and to support regulatory framework that protects citizens but focuses more on dialogue and co-creation. For more see visit OECD Network on Governance (GovNet) resource page and review draft concept note on Digital transformation and governance and the role of GovNet (DCD/DAC/GOVNET(2024)23).

- Support the development of fiscal DPI governance benchmarks, including minimum thresholds for participation, auditability, redress, and public oversight.
 - Embed TPAI-related performance indicators into vendor terms of reference and project monitoring.
 - Coordinate with multilateral and bilateral actors to integrate governance standards into global frameworks such as the Open Government Partnership (OGP),²⁰ PEFA, and the Digital Principles for Development.²¹
- **Invest in culture change:**
 - Fund behavioral insights research and change management strategies to better connect ministries using these systems and their vendors to the communities and citizens they are serving.
 - Promote human-centred design methods, particularly those responsive to citizen engagement, social safeguards, and inclusion.
 - Reposition governance features as core design imperatives, not secondary or optional.
 - **Foster shared learning and adaptive reform:**
 - Support communities of practice, peer learning exchanges, and fiscal DPI observatories to surface and disseminate emerging innovations. Leverage resources such as the Digital Public Infrastructure Map (DPI Map) developed by the UCL IIPP.
 - Invest in diagnostic tools such as exclusion audits, safeguards reviews, and usability assessments.
 - Support comparative research on TPAI outcomes across countries and vendors.

7. Governing the Backbone: Recommendations

A recurring theme across interviews was that while investment in technical platforms is expanding, funding for governance mechanisms, civic intermediaries, reform coalitions, and user-facing components remains minimal. Too often, systems are designed and deployed without equivalent attention to participation, oversight, or safeguards. Respondents underscored that DPI must be seen not only as technical infrastructure, but also as political infrastructure shaping who participates, who benefits, and who decides.

To close this gap, targeted, informed, and coordinated investment is needed in three areas:

- (i) **Code:** Build on open, secure, and modular technology that embeds transparency and accountability by design.
- (ii) **Coalitions:** Support civic actors, oversight bodies, and reform partners to monitor, shape, and advocate around digital fiscal systems.
- (iii) **Shared Norms:** Advance global standards, benchmarks, and/or performance metrics that place governance outcomes of TPAI at the heart of digital infrastructure.

²⁰ The OGP is a multilateral initiative that aims to secure concrete commitments from governments to promote transparency, empower citizens, fight corruption, and harness new technologies to strengthen governance. TPAI principles are central to many OGP national action plans. Learn More: <https://www.opengovpartnership.org>.

²¹ A set of nine guidelines developed through a community-driven process, the principles emphasize user-centered design, open standards, and collaboration. Originally developed in 2014, the principles are officially endorsed by more than 300 organizations, including donors, international organizations, and civil society organizations. During the first decade (2014-2024), they widely influenced funder procurement policies and the design and implementation of development programs. In 2024, the principles were updated in consultation with a diverse set of individuals and organizations. While not DPI-specific, they offer a foundation for embedding transparency and accountability into digital system design. Learn more at <https://digitalprinciples.org>.

The window for shaping fiscal DPI's trajectory is open now. As systems become entrenched, retrofitting governance becomes more costly and complex. It is not only a moment for risk mitigation but a strategic opportunity to guide digital fiscal systems toward democratic, rights-based, and inclusive outcomes. The following priority actions offer a roadmap for coordinated funder engagement and a shared learning agenda:

(i) Implement governance-integrated fiscal DPI pilots in three to five countries.

Demonstration projects should embed TPAI principles from the outset and be co-designed by ministries of finance, civil society actors, and digital governance partners. These pilots can pursue both efficiency and governance goals in tandem, featuring participatory budgeting tools, public grievance portals, exclusion audits, and transparency dashboards.²² Each pilot should generate practical toolkits and contextual insights to inform adaptation and scale across diverse settings.

(ii) Develop and test TPAI benchmarks for digital fiscal systems. Support the creation and testing of measurable benchmarks for TPAI across digital fiscal systems. These benchmarks should promote donor alignment and shared learning, while remaining flexible enough to reflect local political and institutional realities. The goal is not rigid cross-country comparison but rather to guide context-sensitive implementation and help funders and reformers prioritize governance outcomes that align with country needs. This effort could build on existing frameworks such as the PEFA Framework, the OCDS, and the Open Budget Survey (OBS), while addressing gaps through new indicators for public engagement, civic oversight, grievance redress, and safeguards.

For example, the UCL Institute for Innovation and Public Purpose (IIPP) proposes a robust framework for assessing societal value from digital public infrastructure, emphasizing metrics that go beyond technical functionality to capture civic engagement, inclusion, democratic governance, and public value creation. These indicators are highly relevant for fiscal DPI, as they foreground issues like participation, equity, and the social contract alongside more conventional performance metrics. Integrating UCL IIPP's approach could help fill gaps left by existing frameworks and promote a more holistic, globally informed benchmarking process for TPAI in digital fiscal systems.

(iii) Strengthen shared learning, dialogue, and alignment platforms. Invest in a networked approach to shared learning, building on existing platforms rather than creating duplicative ones. Forums such as CABRI, OGP, and the DPGA already convene reformers across government and civil society. These and similar initiatives can serve as anchors for aligning governance principles, coordinating diagnostics, and co-designing fiscal DPI approaches grounded in real-world experience. Such platforms should not be purely technical. They should foster political dialogue, curate evidence, map global initiatives (as this scoping suggests is needed), and support joint experimentation with safeguards, accountability tools, and implementation models. Most importantly, they must be driven by country priorities and designed to reflect diverse political economies and capacities, not impose a one-size-fits-all model.

²² Transparency dashboards refer to digital tools that visualize key fiscal data such as budget allocations, expenditures, procurement contracts, or beneficiary registries, in formats accessible to the public. Effective dashboards enable users to monitor spending, track implementation progress, and identify discrepancies or gaps, supporting accountability and informed civic engagement. Their utility depends on data completeness, regular updates, user-centered design, and enabling conditions for meaningful use (e.g., digital literacy, legal rights to information, and follow-up mechanisms).

8. Conclusion

DPI (including fiscal DPI) is no longer a back-office tool — it is fast becoming the governance backbone of public service delivery. As governments digitize and automate fiscal systems, they are building the infrastructure that determines who is visible to the state, who receives public support, and who can hold institutions accountable. Whether fiscal DPI will enable greater accountability or reinforce opacity and exclusion depends on the design and governance choices made now.

Cross-border interoperability and regulatory harmonization remain major challenges as DPI systems multiply globally. The Cambridge Centre for Alternative Finance (2025) highlights the rapid uptake of digital identity, real-time payment, and consent-based data sharing across 113 jurisdictions. Yet this pace of deployment has exposed gaps in oversight, as fragmented governance can undermine both innovation and consumer protection, especially in multi-jurisdictional contexts.

Effective DPI governance now requires cross-sectoral and cross-border coordination among multiple regulators, standard-setters, and industry stakeholders. National case studies (e.g., Brazil's Pix and India's Unified Payment Interface) show that both state-led and industry-inclusive models can be effective, but only with clear frameworks for accountability, interoperability, and public interest safeguards.

At this formative stage, funders and reform partners wield significant but differentiated influence. Institutions such as the World Bank, IMF, and regional development banks are particularly well-placed to shape procurement models, embed safeguards, and set interoperability standards as they are key technical advisors and financiers of core fiscal systems. Bilateral donors can complement this through policy dialogue, pilot funding, and political brokering. Philanthropic funders, meanwhile, are well-positioned to support innovation, civil society participation, and catalytic research.

Across this spectrum, key shared priorities include:

- Embedding civic participation and public voice into the design and deployment of fiscal systems, including considering the role of parliaments.
- Institutionalizing safeguards for transparency and equity and establishing robust grievance redress mechanisms.
- Incentivizing interoperability, open standards, and modular system design to enable long-term adaptability, integration of emerging technologies, and responsiveness to evolving user and governance needs.
- Avoiding vendor lock-in.

The next phase of fiscal DPI must be governed deliberately, not just digitized efficiently, and getting governance right in fiscal DPI means embedding it up front, not treating it as an afterthought. It requires targeted investments, shared principles, and strategic coordination among actors with differentiated but complementary roles. Ultimately, country governments and local coalitions will determine the success of these systems. The global community's role is to support, not supplant, that leadership.

Acronyms & Abbreviations

AI	Artificial Intelligence
AU	African Union
CABRI	Collaborative Africa Budget Reform Initiative
CGD	Center for Global Development
CKAN	Comprehensive Knowledge Archive Network
CoP	Community of Practice
CSO	Civil Society Organization
DIAL	Digital Impact Alliance
DIGIT	Digital Infrastructure for Governance, Impact, & Transformation
DPG	Digital Public Good
DPGA	Digital Public Goods Alliance
DPI	Digital Public Infrastructure
DRM	Domestic Resource Mobilization
EU	European Union
FCDO	Foreign, Commonwealth, & Development Office
FCDO	Foreign, Commonwealth & Development Office (UK Government)
FMIS	Financial Management Information System
IFMIS	Integrated Financial Management Information System
G2P	Government-to-Person (Payments)
GDC	Global Digital Compact
GovStack	Government Stack Initiative
GovTech	Government Technology
IBP	International Budget Partnership
ICT	Information and Communication Technology
ID	Identification
IFI	International Financial Institution
IMF	International Monetary Fund
LMICs	Low- and Middle-Income Countries
MoF	Ministry of Finance
NAP	Network Access Point
OBS	Open Budget Survey
OCDS	Open Contracting Data Standard
ODI	Formerly the Overseas Development Institute
Global	
OECD	Organization for Economic Co-operation and Development
OGP	Open Government Partnership
OUTA	Organization Undoing Tax Abuse
PEFA	Public Expenditure and Financial Accountability
PET	Privacy-Enhancing Technology
PFM	Public Financial Management
SAI	Supreme Audit Institution
SDG	Sustainable Development Goal
TAI	Trust, Accountability, and Inclusion Collaborative
TPAI	Transparency, Participation, Accountability, and Inclusion
UN	United Nations
UNDP	United Nations Development Programme
UPI	Unified Payments Interface
WFD	Westminster Foundation for Democracy

References

- African Development Bank Group. (2025, July 11). *Digital Technologies Could Unlock Billions in Revenue for Africa, Experts Say*. African Development Bank Group, News. <https://www.afdb.org/en/news-and-events/digital-technologies-could-unlock-billions-revenue-africa-experts-say-85303>
- Alabi, R. A., & Adams, O. O. (2020). *The Impact of E-Wallet Fertilizer Subsidy Scheme and its Implication on Food Security in Nigeria* (390). <https://aercafrica.org/wp-content/uploads/2020/01/Research-Paper-390.pdf>
- Andrews, M., Cangiano, M., Cole, N., De Renzio, P., Krause, P., & Seligmann, R. (2014). *This is PFM* (285; CID Working Papers). https://www.hks.harvard.edu/sites/default/files/centers/cid/files/publications/faculty-working-papers/285_Andrews_This+is+PFM.pdf
- Blackmore, S., & Fjeldstad, O.-H. (2025). *An elusive fiscal social contract: Three lessons from South Africa* (3; CMI Insight). [https://open.cmi.no/cmi-xmlui/handle/11250/3185442#:~:text=We%20argue%20that%20\(1\)%20excessive,different%20triggers%20for%20fiscal%20accountability](https://open.cmi.no/cmi-xmlui/handle/11250/3185442#:~:text=We%20argue%20that%20(1)%20excessive,different%20triggers%20for%20fiscal%20accountability)
- Cem, Y., Joanna, D., Watkins, A., & Dorotinsky, W. L. (2011). *IFMIS: 25 Years of WB Experience on What Works and What Doesn't*. <https://doi.org/10.1596/78-0-8213-8750-4>
- Chaudhuri, R. (2023, September). Decoding the G20 Consensus on Digital Public Infrastructure: A Key Outcome of India's Presidency. *Carnegie Endowment for International Peace*. <https://carnegieendowment.org/research/2023/09/decoding-the-g20-consensus-on-digital-public-infrastructure-a-key-outcome-of-indias-presidency?lang=en>
- Cho, Y., Kawasoe, Y., Rodriguez, R., & Venezuela, M. (2021). *COVID-19 G2P Cash-Transfer Payments Case Study: PHILIPPINES*. <https://documents1.worldbank.org/curated/en/368351625163110870/pdf/COVID-19-G2P-Cash-Transfer-Payments-Case-Study-Philippines.pdf>
- Clark, J., Marin, G., Ardic Alper, O. P., & Galicia Rabadan, G. A. (2025). *A Digital Public Infrastructure and Development: a World Bank Group Approach*. <https://documents1.worldbank.org/curated/en/099031025172027713/pdf/P505739-84c5073b-9d40-4b83-a211-98b2263e87dd.pdf>
- Collaborative Africa Budget Reform Initiative (CABRI), & ODI Global. (2024, November). *International Conference on Public Finance in the Digital Era*. <https://www.cabri-sbo.org/en/events/international-conference-on-public-finance-in-the-digital-era>
- Daub, M., Domeyer, A., Lamaa, A., & Renz, F. (2020, July). Digital public services: How to achieve fast transformation at scale. *Mckinsey & Company - Public Sector Practice*. <https://www.mckinsey.com/industries/public-sector/our-insights/digital-public-services-how-to-achieve-fast-transformation-at-scale>
- Digital Public Goods Alliance. (2024). *Digital Public Goods Standard*. <https://www.digitalpublicgoods.net/standard>
- Eaves, D., Vasconcellos, B., & Coyle, D. (2025). *The Economics of Shared Digital Infrastructures: A framework for assessing societal value* (UCL Institute for Innovation and Public Purpose). <https://www.bennettschool.cam.ac.uk/wp-content/uploads/2025/04/the-economics-of-shared-digital-infrastructures-1.pdf>
- European Commission. (2022). *Serbia 2022 Report Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions* (SWD (2002)338 Final). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0338>
- Foreign, C. & D. O. (FCDO)-U. (2024). *Digital Development Strategy 2024-2030*. <https://assets.publishing.service.gov.uk/media/6613e7f7c4c84d4b31346a68/FCDO-Digital-Development-Strategy-2024-2030.pdf>
- G20 Digital Economy Ministers. (2023). *G20 Digital Economy Ministers Meeting Outcome Document and Chair Summary*. https://g7g20-documents.org/fileadmin/G7G20_documents/2023/G20/India/Sherpa-Track/Digital%20Economy%20Ministers/1%20Ministers%20Language/G20_Digital%20Economy%20Ministers%20Meeting_Outcome_Document_and_Chair_Summary_19082023.pdf
- Gilman, H., & Wampler, B. (2019). The Difference in Design: Participatory Budgeting in Brazil and the United States. *Journal of Public Deliberation*, 15(1), 4–23. <https://delibdemjournal.org/article/id/590/>

- International Telecommunication Union (ITU). (2024, October 31). *Navigating Data Governance: A Guiding Tool for Regulators*. Digital Regulation Platform / ITU. <https://digitalregulation.org/navigating-data-governance-a-guiding-tool-for-regulators/>
- Khalid, N., & Khera, R. (2017). Aadhaar and food security in Jharkhand: Pain without gain? *Economic and Political Weekly*, 52(50), 54–64. <https://www.researchgate.net/publication/322151401>
- Khera, R. (2019). Aadhaar Failures: A Tragedy of Errors. *Economic and Political Weekly (Engage)*, 54(14). <https://www.epw.in/engage/article/aadhaar-failures-food-services-welfare>
- Labib Zulfiqar, F., Silvia, T., & Abrori, A. (2024). Digital Transformation and Sustainable Local Tax System Practices in Emerging Market: A Qualitative Analysis. *Journal of Advances in Accounting, Economics, and Management*, 2(2), 1–12. https://www.researchgate.net/publication/387675140_Digital_Transformation_and_Sustainable_Local_Tax_System_Practices_in_Emerging_Market_A_Qualitative_Analysis
- Löffler, G. (2025). *Thriving or withering? The role of local government in the digital era*. *government in the digital era*. www.odi.org/publications/public-finance-in-the-digital-era
- Long, C. (2024, November 15). *The role of the finance ministry in making better technology choices*. ODI: Think Change. <https://odi.org/en/insights/role-of-the-finance-ministry-in-making-better-technology-choices/>
- Long, C., Cangiano, M., Middleton, E., & Stewart, J. (2023). *Digital public financial management An emerging paradigm* (Working Paper). www.odi.org/en/publications/digital-public-finance-in-the-digital-era-emerging-paradigm
- Long, C., & Naik, A. A. (2025). *What the digital era means for PFM*. www.odi.org/publications/public-finance-in-the-digital-era-emerging-paradigm
- Madhukar, C. (2021). *Reimagining digital public infrastructure is no longer just a development agenda*. <https://omidyar.com/update/reimagining-digital-public-infrastructure-is-no-longer-just-a-development-agenda/>
- Mellon, J., Peixoto, T. C., & Sjöberg, F. M. (2022). *The Haves and the Have Nots Civic Technologies and the Pathways to Government Responsiveness* (10195; Policy Research Working Paper). <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099343109282218192/idu0348c81df0b38e044840b3770b94dced6276f>
- Mukherjee, A., & Maruwada, S. (2021). *Fast-Tracking Development: A Building Blocks Approach for Digital Public Goods*. <https://www.cgdev.org/publication/fast-tracking-development-building-blocks-approach-digital-public-goods>
- National Institute of Strategic Resilience, TQH, & accessnow. (2025). *From Risk to Resilience: A Rights-based Approach to DPI Readiness in the Global Majority*. In *From Risk to Resilience: A Rights-based Approach to DPI Readiness in the Global Majority* (Discussion Paper). The Quantum Hub - Rights Con25. <https://thequantumhub.com/from-risk-to-resilience/>
- Nose, M. (2023). *Inclusive GovTech: Enhancing Efficiency and Equity Through Public Service Digitalization* (WP/23/226; Fiscal Affairs Department). <https://www.imf.org/-/media/Files/Publications/WP/2023/English/wp23226-print.pdf.ashx>
- Organization for Economic Co-operation and Development (OECD). (2019). *Infrastructure and Regional Connectivity in Africa* (Policy Note). https://www.oecd.org/content/dam/oecd/en/publications/reports/2019/08/infrastructure-and-regional-connectivity-in-africa_226be97f/8e02692a-en.pdf
- Organization Undoing Tax Abuse (OUTA). (2020, September 2). *AG Covid-19 report exposes governments general failures*. Organization Undoing Tax Abuse (OUTA). <https://www.outa.co.za/blog/newsroom-1/ag-s-covid-19-report-exposes-government-s-general-failures-951>
- Oriol, A. M., & Ferreira, R. (2025). *The future of fiscal transparency*. https://odi.org/documents/9506/Ch7_-_The_future_of_fiscal_transparency.pdf
- Patel, M., Stosky, J., Gourley, S., & Houghton, D. (2013). *The Emergence of Civic Tech: Investments in a Growing Field*. <https://knightfoundation.org/wp-content/uploads/2019/06/knight-civic-tech.pdf>
- Peixoto, T., & Fox, J. (2016). When Does ICT-Enabled Citizen Voice Lead to Government Responsiveness? *IDS Bulletin*, 47. <https://opendocs.ids.ac.uk/ndownloader/files/48235363>
- Sang, D., Munga, J., & Sambuli, N. (2025). *Digital Public Infrastructure: A Practical Approach for Africa*. <https://carnegieendowment.org/research/2025/02/digital-public-infrastructure-a-practical-approach-for-africa?lang=en>
- Scales, A., Akiwowo, S., Joy, A., & Egan, C. (2025). *Using digital technology for democratic resilience, transformation and impact* (Learning Paper). <https://www.wfd.org/sites/default/files/2025->

- 06/wfd_2025_using_digital_technology_for_democratic_resilience_transformation_and_impact_-_learning_paper.pdf
- Schoemaker, E. (2023, June 9). *Governing Digital Public Infrastructure*. Medium. <https://medium.com/caribou-digital/governing-digital-public-infrastructure-5cd1c985ed22>
- Tavares, A. P. dos S., & Masiero, S. (2023). DIGITAL IDENTITY AND SOCIAL PROTECTION PROGRAMS: LEAVING NO ONE BEHIND? LEAVING NO ONE BEHIND? *E ECIS 2023 Proceedings*, Art. 61. https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1060&context=ecis2023_rip
- Uña, G. (2022, December 2). *Digitalization of Public Finance and DPI: Opportunities and Challenges*. IMF PFM Blog. <https://blog-pfm.imf.org/en/pfmblog/2022/12/>
- United National Development Programme (UNDP), & Office of the Secretary-General's Envoy on Technology (OSET). (2024). *The Universal DPI Safeguards Framework: A Guide to Building Safe and Inclusive DPI for Societies*. <https://dpi-safeguards-framework.org/frameworkpdf>
- United Nations. (2020). *Report of the UN SG - Roadmap for Digital Cooperation*. <https://www.un.org/digital-emerging-technologies/content/roadmap-digital-cooperation#:~:text=On%2011%20June%202020%2C%20the,technologies%20while%20addressing%20their%20challenges>
- United Nations Development Programme. (2023). *The DPI Approach: A Playbook*. <https://www.undp.org/publications/dpi-approach-playbook>
- United Nations Development Programme (UNDP). (2023). *Accelerating the SDGs through digital public infrastructure*. <https://www.undp.org/sites/g/files/zskgke326/files/2023-12/undp-accelerating-the-sdgs-through-digital-public-infrastructure-v2.pdf>
- World Bank. (2024). *Digital Progress and Trends Report 2023*. <https://doi.org/10.1596/978-1-4648-2049-6>
- World Bank. (2025). *Financial Management Information Systems (FMIS)*. <https://www.worldbank.org/en/topic/governance/brief/financial-management-information-systems-fmis>
- World Bank Group. (2015). *Managing Change in PFM System Reforms: A Guide for Practitioners Version Control*. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/993981509959603664>